

What is claimed is:

1. A self-replicating episomal DNA expression vector for expressing a gene of interest in a host cell in a tissue-restricted manner, the vector comprising:
- (a) a self-replicating origin of replication; and
 - (b) an LCR, or component thereof, which when operatively linked to a gene of interest and present in a host cell directs expression of said gene in a tissue-restricted manner.
2. The self-replicating episomal DNA expression vector of claim 1, further comprising a gene of interest operatively linked to the LCR, or component thereof.
3. The self-replicating episomal DNA expression vector of claim 2 wherein the component of an LCR is a component of the β -globin LCR consisting essentially of HS3.
4. The self-replicating episomal DNA expression vector of claim 2 wherein the LCR, or component thereof is the β -globin LCR or component thereof excluding site HS2.
5. The self-replicating episomal DNA expression vector of claim 2 wherein the component of an LCR is a component of the β -globin LCR consisting essentially of HS3 and HS4.
6. The self-replicating episomal DNA vector of claim 1, wherein the origin of replication is a viral origin of replication.

7. The self-replicating episomal DNA expression vector of claim 6 wherein the viral origin of replication is an origin of replication from Epstein-Barr virus.

8. The self-replicating episomal DNA expression vector of claim 1, further comprising a sequence encoding a replication factor required for replication of the expression vector in a host cell.

9. The self-replicating episomal DNA expression vector of claim 8 wherein the sequence encoding the replication factor is selected from the group consisting of a sequence encoding EBNA-1 of Epstein-Barr virus, a sequence encoding E1 of papilloma virus, and a sequence encoding E2 of papilloma virus.

10. The self-replicating episomal DNA expression vector of claim 1, further comprising an antibiotic resistance gene for selecting cells in culture stably transfected with the expression vector.

11. The self-replicating episomal DNA expression vector of claim 1, further comprising a eukaryotic transcription termination sequence placed between the LCR and the gene of interest and operative to prevent transcription therebetween.

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12. A pair of vectors comprising a self-replicating/episomal DNA expression system for expressing a gene of interest in a host cell in a tissue-restricted manner, the pair of vectors comprising:

i. a first vector comprising

(a) an origin of replication;

(b) an LCR, or component thereof, which when operatively linked to a gene of interest and present in a host cell directs expression of said gene in a tissue-restricted manner; and

(c) a cloning site for a gene of interest; and

ii. a second vector comprising

(a) ^{said} an origin of replication; and

(b) a sequence encoding a replication protein, said replication protein being necessary for replication of said origin of replication.

13. The pair of vectors of claim 12, further comprising a gene of interest operatively linked to the LCR, or component thereof.

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14. The pair of vectors of claim 12 wherein the component of an LCR is a component of the β -globin LCR consisting essentially of HS3.

15. The pair of vectors of claim 12 or claim 13 wherein the LCR, or component thereof is the β -globin LCR or component thereof excluding site HS2.

- ~~vectors of claim 12 wherein the sequence is essentially of HS3 and HS4.~~
- ~~f vectors of claim 12 wherein~~
- ~~f vectors of claim 17, said virus~~
- ~~vectors of claim 12 wherein the~~
- ~~p consisting of a sequence en-~~
- ~~capilloma virus, and a sequen-~~
- ~~f vectors of claim 12, wherein~~
- ~~an antibiotic resistance gene fo-~~
- ~~r.~~
- ~~f vectors of claim 12 where~~
- ~~termination sequence placed be-~~
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22. A method for expressing a gene of interest in cells of a specific tissue-type comprising administering a self-replicating episomal DNA expression vector of claim 1 or a pair of vectors of claim 12 to a mammal.

23. A method of obtaining persistent, tissue-specific expression of a gene of interest in a host cell in culture, comprising culturing a host cell transfected with the vector of claim 1 or the pair of vectors of claim 12.

24. A transgenic animal containing cells which contain the expression vector of claim 1 or the pair of vectors of claims 12.

25. A method for identifying an LCR or component thereof which when comprised in an episomal DNA expression vector, operatively linked to a gene of interest, and present in a host cell, directs expression of said gene in a tissue-restricted manner, comprising:

- i. testing the LCR or component thereof by transfecting an episomal vector containing the candidate LCR or component thereof operatively linked to a marker gene into a cell line in which the LCR when integrated is active and also into a cell line in which the LCR when integrated is inactive; and
- ii. identifying the LCR or component thereof which is only active in the cell line in which the LCR when integrated is active.

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